

## A. Connect and Disconnect

time limit per test: 3.0 s

memory limit per test: 256 MB

**input:** connect.in**output:** connect.outCodeforces  
GYM 100551

Do you know anything about DFS, Depth First Search? For example, using this method, you can determine whether a graph is connected or not in  $O(E)$  time. You can even count the number of connected components in the same time.

Do you know anything about DSU, Disjoint Set Union? Using this data structure, you can process queries like "Add an edge to the graph" and "Count the number of connected components in the graph" fast.

And do you know how to solve Dynamic Connectivity Problem? In this problem, you have to process three types of queries fast: